

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
16 June 2005 (16.06.2005)

PCT

(10) International Publication Number
WO 2005/055178 A1

(51) International Patent Classification⁷: **G09F 9/30**

(21) International Application Number:
PCT/JP2004/018073

(22) International Filing Date:
29 November 2004 (29.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2003-403849 2 December 2003 (02.12.2003) JP
2003-403850 2 December 2003 (02.12.2003) JP

(71) Applicant (for all designated States except US): SEMI-
CONDUCTOR ENERGY LABORATORY CO., LTD.
[JP/JP]; 398, Hase, Atsugi-shi, Kanagawa 243-0036 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): YAMAZAKI,
Shunpei [JP/JP]; c/o Semiconductor Energy Laboratory
Co., Ltd., 398, Hase, Atsugi-shi, Kanagawa 243-0036
(JP). KUWABARA, Hideaki [JP/JP]; c/o Semiconductor
Energy Laboratory Co., Ltd., 398, Hase, Atsugi-shi,
Kanagawa 243-0036 (JP). MAEKAWA, Shinji [JP/JP];
c/o Semiconductor Energy Laboratory Co., Ltd., 398,
Hase, Atsugi-shi, Kanagawa 243-0036 (JP). FUJII, Gen
[JP/JP]; c/o Semiconductor Energy Laboratory Co., Ltd.,

398, Hase, Atsugi-shi, Kanagawa 243-0036 (JP). ISA,
Toshiyuki [JP/JP]; c/o Semiconductor Energy Laboratory
Co., Ltd., 398, Hase, Atsugi-shi, Kanagawa 243-0036 (JP).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

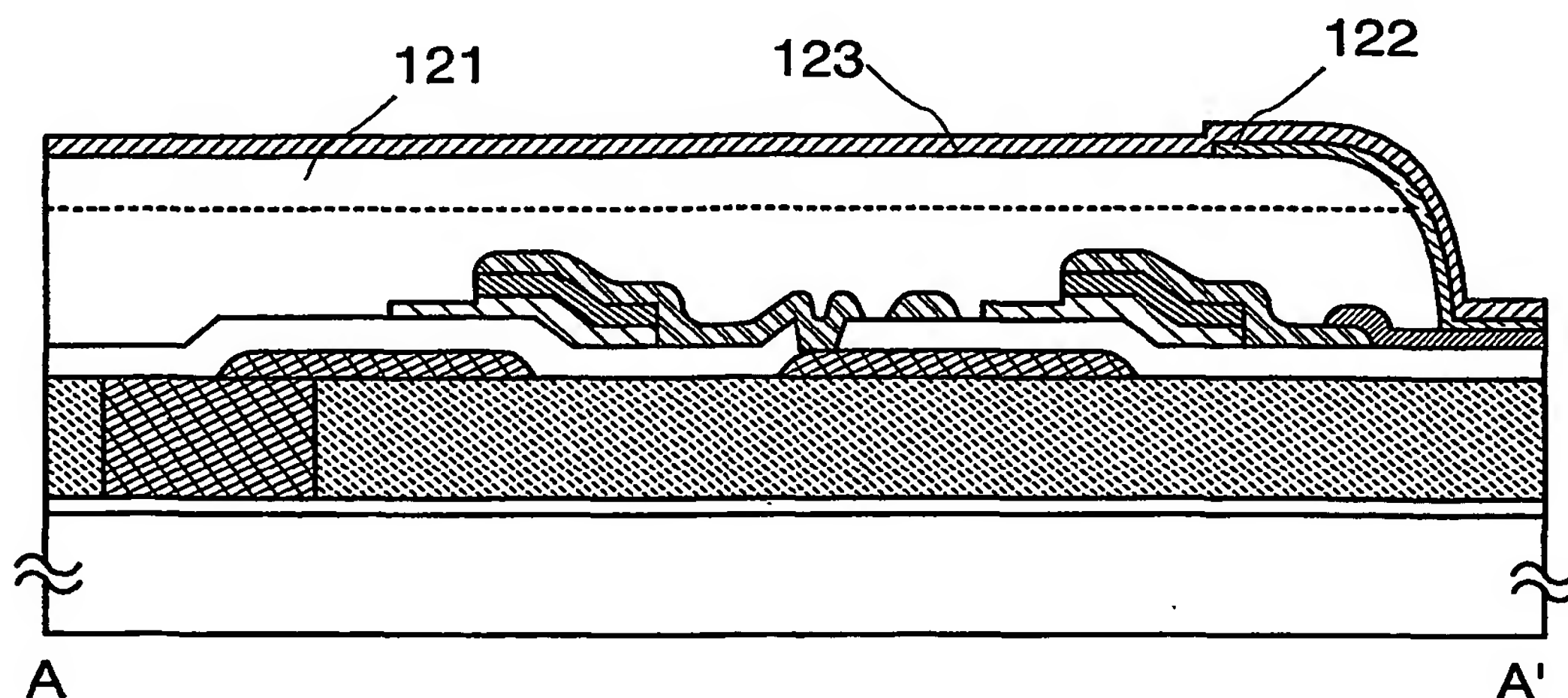
(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,
SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

[Continued on next page]

(54) Title: DISPLAY DEVICE, METHOD FOR MANUFACTURING THE SAME, AND TELEVISION APPARATUS



(57) Abstract: An object of the present invention is to provide a display device which can be manufactured with usability of a material improved and with a manufacturing step simplified and to provide a manufacturing technique thereof. One feature of a display device of the present invention is to comprise an insulating layer having an opening, a first conductive layer formed in the opening, and a second conductive layer formed over the insulating layer and the first conductive layer, wherein the first conductive layer is wider and thicker than the second conductive layer, and the second conductive layer is formed by spraying a droplet including a conductive material.

WO 2005/055178 A1



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.